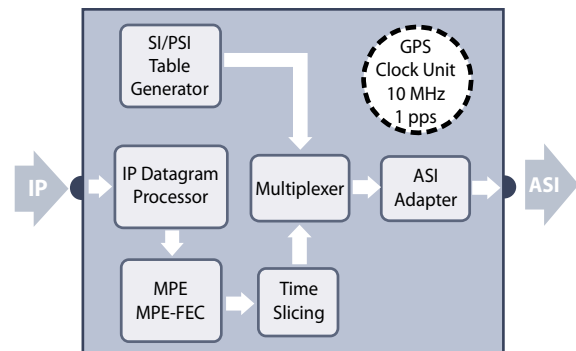


DVB-SH IP Encapsulator

Model: DVE 6000S

Product Features

- Fully compliant with DVB-SH standards
- Reed Solomon Encoding – user specified
- Accurate time slicing control
- Two independent operational modes: “Dynamic” and “Slotted Allocation” burst scheduling
- Dynamic burst scheduling maximizes bandwidth utilization
- Easy integration into an SFN network
- Loss free handover
- Input stream support for IPv4, IPv6
- Supports constant and variable IP sources
- SI/PSI table generation (PAT, PMT, INT, NIT, SDT, EIT, TDT, TOT)
- SHIP insertion
- Accurate bit rate generation, based on Modulator settings
- Web GUI, SNMP and CLI control interfaces
- Up to 32 Mbps throughput covering all possible DVB-SH modes
- Net Manager Application for managing multiple encapsulators
- Packet filtering based on IP Addresses and ports
- Transport stream recording and playback
- Optional IP transport stream output
- Complete support for DVB-SH signaling: TPS bits for OFDM and signaling field for TDM



DVB-SH IP Encapsulator Functional Diagram

Product Description

The DVE 6000S encapsulator is a fully compliant, DVB-SH standard device, designed to cover all possible DVB-SH modes. The encapsulator processes registered IP traffic, called services, into a DVB-SH compliant MPEG-2 ASI stream.

One of the main functions is to prepare and schedule bursts of MPE-FEC frames, according to the parameters of the registered services. This is not an easy task, especially if bandwidth utilization is a priority.

“Slotted allocation” or “static time-slicing” mode is one simple solution to this problem. In this mode, the device allocates constant portions of the time frame for each service and fills the bursts when IP datagrams become available. Obviously, this approach is not efficient and wastes bandwidth during lower bit rate periods and service interruptions. It can even lead to packet loss if the service bit-rate increases and the additional slots required are already allocated in portions of the time frame.

“Dynamic time-slicing allocation” mode is the other, more complex and efficient solution. The encapsulator allocates future bursts for the service based on the incoming IP traffic rate of that service.

If a service has a higher bit rate at one moment in time, it will occupy a larger portion of the available bandwidth. Since our solution uses a built in SFN adapter, the output bit rate generated by the encapsulator is an exact match to the bit rate of the modulators in the SFN network. The bitrate is determined by the bandwidth, constellation, code rate, and guard interval.

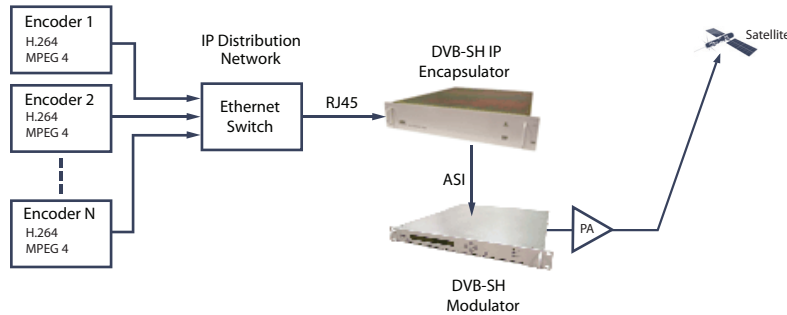
The DVE 6000S implements two independent “Dynamic Allocation” and “Slotted Allocation” modes. Depending on the services, system integrators may choose the appropriate scheme. “Slotted Allocation” can be used, for example, in a network with a large number of low bit rate CBR services, where it is necessary to preserve uniform delivery of the content in static time slots and intervals. “Slotted Allocation” can also be used for channels where the latency needs to be minimized. In most cases, we believe broadcasters will choose the “Dynamic Time-Slicing” mode, which will better utilize the bandwidth and will allow delivery of CBR and VBR content reliably and efficiently without dropping packets.

DVB-SH IP Encapsulator

Model: DVE 6000S



Typical DVB-SH Network Diagram



DVE 6000S Advantages over competing products

- Two operational modes: dynamic time-slice allocation and static allocation
- SFN adapter, part of the encapsulator
- Automatic SI/PSI table generation
- Transport stream player and recorder
- Packet filtering
- Single compact unit



User Friendly Setup and Monitoring

- Control Interfaces: Intuitive WEB GUI interface, SNMP, CLI on Telnet, CLI on RS232
- DVB-SH Net Manager Application:

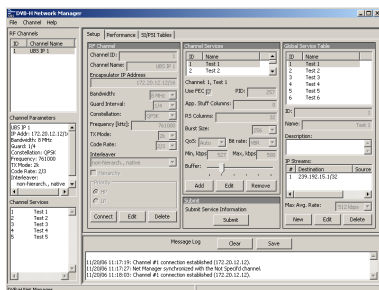
Remote setup and configuration of:

- Encapsulator services and parameters
- Network Topology
- Device Control

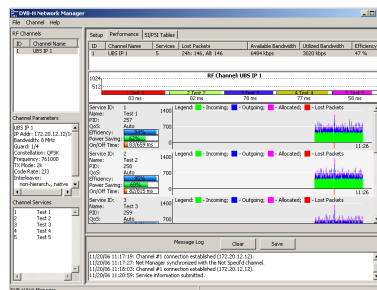
Monitoring of:

- Service Transmission
- Network Efficiency

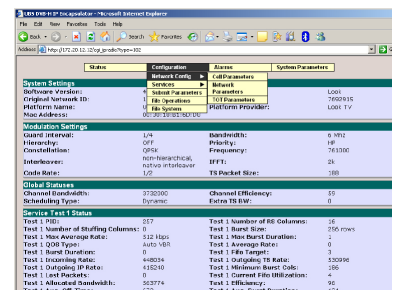
NetManager Setup



NetManager Performance Monitoring



Web GUI Interface





DVB-SH IP Encapsulator

Model: DVE 6000S

DVB-SH IP Encapsulator Features

- User Selectable Reed Solomon: (0 - 64 RS columns)
(0 - 190 Stuffing columns)
- Very accurate time slicing control: ≤ 10 ms
- Two independent Dynamic Burst Scheduling and Slotted Allocation Scheduling modes
- Packet filtering based on IP Addresses and Ports
- MPEG-2 TS playback and recording
- SI/PSI table generation (PAT, PMT, INT, NIT, SDT, EIT, TDT, TOT)
- SFN Synchronization.
- Up to 32 Mbps throughput

DVB-SH Signal Processing

- Supported modes, IFFT: 1k, 2k, 4k, 8k
- Guard intervals: 1/4, 1/8, 1/16, 1/32
- Code rates: 1/5, 2/9, 1/4, 2/7, 1/3, 2/5, 1/2, 2/3
- Constellations: QPSK, 16-QAM
- Max. delay data: 0 - 1.0 sec, resolution 100 ns
- Bandwidth: 8 MHz, 7 MHz, 6 MHz, 5 MHz, 1.7 MHz
- SHIP insertion
- Accurate Bit rate generation, based on the Modulator settings

Management Interfaces

Management	Ethernet 10/100 Base-T Web GUI, SNMP, Telnet, Network Manager Connector: RJ45
RS232 Serial Interface Console	CLI (Command Line Interface) Connector: DB9 (M)
RS232 Serial Interface Debug	Reserved for factory test and debug Connector: DB9 (M)

Standards Compliance

ETSI EN 301 192	EN 50083-9
ETSI EN 300 744	ISO/IEC 13818-1
ETSI EN 302 304	ISO/IEC 13818-6
ETSI EN 300 468	DVB Doc A110
ETSI TS 101 191	DVB Doc A111

General Product Specifications

Signal Input

Traffic Input	Ethernet 10/100 Base-T
Connector	RJ45

Signal Output

Transport Stream Output	ASI, (IP output is optional)
Connector	BNC (F), 75 ohm (x2) (RJ45 optional)

Clock Reference

Frequency	10 MHz
Connector	BNC (F), 50 ohm
Level	100 mV - 3 Vpp

Time Reference Input

Connector	BNC (F), 50 ohm
Frequency	1 pps
Amplitude	TTL, triggered on positive transition

Monitoring Output

MIP Sync OUT	
Connector	BNC (F), 50 ohm
TTL Level	High coincides with MIP packet

Operating System

Linux Based

Power Supply

Voltage	90 - 250 VAC
Frequency	47 - 63 Hz
Power Consumption	max. 100 VA

Mechanical

Size	2 U of 19" wide cabinet
Dimensions (W x H x D)	483mm x 89mm x 483mm (19" x 3.5" x 19")
Weight	6kg max. (13 lbs.)

Environmental

Operating Temperature	5°C to 50°C (32°F to 122°F)
Storage Temperature	-30°C to 70°C (-22°F to 158°F)
Relative Humidity (operating/storage)	max. 95%, non condensing
Cooling	Temperature controlled fan to assist natural convection

(specifications are subject to change without notice)

